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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,151	06/30/2003	Chandrakant D. Patel	200208212-1	8160

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EXAMINER	
CHEN, TSE W	

ART UNIT	PAPER NUMBER
2116	

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/608,151	PATEL ET AL.	
	Examiner	Art Unit	
	Tse Chen	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-14 and 35-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-14 and 35-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 June 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *06302003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I [claims 1-14 and 35-39] in the reply filed on June 26, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Applicant's election with traverse of species "a" [claims 2, 16, 24] in the reply filed on June 26, 2006 is acknowledged. The traversal is on the ground(s) that "it is believed that all of the species can be examined at the same time without serious burden". This is not found persuasive because the species are distinct and would require a different field of search.

The requirement is still deemed proper and is therefore made FINAL.

3. Claims 1-2, 4-14, 35-39 are presented for examination. All other claims are withdrawn.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "maximum cooling capacity of the cooling system is based on a nominal heat dissipation of the computer system, the nominal heat dissipation being less than a maximum heat dissipation of the computer systems"; "maximum cooling capacity of the cooling system is based on an aggregate of the nominal heat dissipation of each of the computer systems"; "nominal heat dissipation is based on an average heat dissipation of the electrical components"; and "an amount of cooling fluid distributed to at least one of the computer systems is substantially proportional to an amount of heat being

dissipated by the at least one of the computer systems" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1, 2, 4-6, 8-11, 14, 35-39 are rejected under 35 U.S.C. 102(a) as being anticipated by Chaiken et al., US Publication 20020183869, hereinafter Chaiken.

7. In re claims 1 and 35, Chaiken discloses a cooling system for cooling computer systems [0002], the cooling system comprising:

- Temperature sensors [20] operable to detect heat dissipated by the computer systems [0023].
- At least one circuit [21] operable to compare an amount of heat [ambient temperature] being dissipated by the computer systems to a threshold [before exceeding operating range] associated with a maximum cooling capacity of the cooling system [0031; operating range based on maximum cooling capacity planned to justify spending without excess], wherein the at least one circuit is operable to place at least one electrical component [element] of the computer systems in a lower-power state [e.g., lower voltage] to reduce heat dissipation in response to the amount of heat being dissipated by the computer systems exceeding the threshold [0023-25].

8. As to claim 2, Chaiken discloses, wherein the lower-power state comprises reducing power consumption [lower voltage] of one or more electrical components in the computer systems [0025].

9. As to claims 4 and 36, Chaiken discloses, wherein the maximum cooling capacity of the cooling system is based on a nominal heat dissipation of the computer systems [ambient temperature within operating range], the nominal heat dissipation being less than a maximum heat dissipation of the computer systems [outside operating range] [0023-24, 0031].

10. As to claim 5, Chaiken discloses, wherein the maximum cooling capacity of the cooling system is based on an aggregate of the nominal heat dissipation of each of the computer systems [0031; adequate cooling capacity for all the subscribers].

11. As to claim 6, Chaiken discloses, wherein the cooling system is designed to cool electrical components of the computer systems based on a nominal heat dissipation [marginal temperature condition] of the electrical components, the nominal heat dissipation being less than a maximum heat dissipation [boundary of operating range] of the electrical components [0023-24].

12. As to claims 8 and 37, Chaiken discloses, comprising cooling components distributing cooling fluid [air conditioning] to the computer systems, wherein the at least one circuit controls the cooling components to distribute cooling fluid as a function of the heat dissipated by the computer systems [0031].

13. As to claim 9, Chaiken discloses, wherein an amount of cooling fluid distributed to at least one of the computer systems is substantially proportional to an amount of heat being dissipated by the at least one of the computer systems [0029, 0031; air conditioning cools proportional to heat].

14. As to claim 10, Chaiken discloses, wherein the cooling components comprise one or more of a valve, valve controller, blower, pump, louvers, actuated cells, and cooling plates [0031; air conditioning inherently requires valves].

15. As to claim 11, Chaiken discloses, wherein the cooling fluid comprises at least one of air [air conditioning] and liquid coolant [0031].

16. As to claims 14 and 39, Chaiken discloses, comprising cooling components distributing cooling fluid to the computer systems, wherein the at least one circuit controls the cooling components to distribute cooling fluid as a function of workload [processing load] for the computer systems [0036].

17. As to claim 38, Chaiken discloses, comprising means for placing the at least one component in a higher-power state in response to excess cooling resources being available for cooling the computer systems [0029; full system with excess cooling provided by new air conditioning].

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaiken as applied to claim 6 above, and further in view of Davidson, US Patent 6946363.

20. Chaiken taught each and every limitation as discussed above. Chaiken did not discuss the details of determining the nominal heat dissipation.

21. Davidson discloses a cooling system wherein the nominal heat dissipation is based on an average heat dissipation [power related to heat] of the electrical components [col.4, ll.19-27].

22. It would have been obvious to one of ordinary skill in the art, having the teachings of Davidson and Chaiken before him at the time the invention was made, to modify the cooling system taught by Chaiken to include the nominal heat dissipation taught by Davidson, as using an average value for nominal determination is very well known in the art and suitable for use in the cooling system of Chaiken. One of ordinary skill in the art would have been motivated to make such a combination as it provides a way to prevent localized hot spots from damaging components [Davidson: col.4, ll.19-27].

23. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaiken as applied to claim 8 above, and further in view of Bradshaw, US Patent 4386733.

24. Chaiken taught each and every limitation as discussed above. Chaiken did not disclose explicitly controlling at least one of valves and louvers to control air flow or controlling at least one of valves and a pump to distribute coolant for cooling the computer systems.

25. In re claim 12, Bradshaw discloses a cooling system wherein the at least one circuit is operable to control at least one of valves [156] and louvers to control air flow for cooling the computer systems based on the amount of heat being dissipated [col.9, l.55 – col.10, l.22].

26. In re claim 13, Bradshaw discloses, wherein the at least one circuit is operable to control at least one of valves [160] and a pump to distribute coolant for cooling the computer systems based on the amount of heat being dissipated [col.9, l.55 – col.10, l.22].

27. It would have been obvious to one of ordinary skill in the art, having the teachings of Bradshaw and Chaiken before him at the time the invention was made, to modify the cooling system taught by Chaiken to include the explicit well known teachings of air conditioning operation taught by Bradshaw, as adjusting an air conditioning valve to control heat is very well known [analogous to opening a window wider to let more air in for coolness during summer] and suitable for use in the cooling system [i.e., air conditioning] of Chaiken. One of ordinary skill in the art would have been motivated to make such a combination as it provides a very well known way to control air flow/coolant in a cooling system [Bradshaw: col.9, l.55 – col.10, l.22].

Response to Arguments

28. Applicant's arguments filed June 26, 2006 have been fully considered.

29. Applicant "believes the Notice of Non-Compliant Amendment is improper and that all the claims were correctly identified as original". Examiner disagrees and submits MPEP 714 II C. (A) which clearly states: "... *For any amendment being filed in response to a restriction or election of species requirement and any subsequent amendment, any claims which are non-elected* ***must*** *have the status identifier (withdrawn). Any non-elected claims which are being amended must have either the status identifier (withdrawn) or (withdrawn–currently amended) and the text of the non-elected claims must be presented with markings to indicate the changes. Any non-elected claims that are being canceled must have the status identifier (canceled).*" At least with the election of Group I without any apparent traverse, Applicant failed to label the non-elected claims resulting from the election [Group II-IV] with the status identifier of "withdrawn". As such, the appropriate status identifiers of the claims must be labeled in response to this office action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tse Chen whose telephone number is (571) 272-3672. The examiner can normally be reached on Monday - Friday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tse Chen
July 12, 2006

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